

Claims:

1. (Currently Amended) [[A]] A light management optical system (LMOS) comprising a beam splitter comprising a dual cholesteric layer.

2. (Original) The beam splitter according to Claim 1, wherein the cholesteric layer is supported on a substrate.

3. (Withdrawn)

4. (Currently Amended) The beam splitter according to Claim 1, further comprising a substrate of neutral optical properties, wherein the dual cholesteric layer is supported by the substrate.

5. (Withdrawn)

6. (Withdrawn)

7. (Withdrawn)

8. (Currently Amended) The LMOS beam splitter according to Claim 1 [[6]], wherein the cholesteric layer comprises a first color cholesteric layer and a second color cholesteric layer.

9. (Currently Amended) The LMOS beam splitter according to Claim 8, wherein the first color cholesteric layer ~~comprises a blue cholesteric layer~~ and the second color cholesteric layer are different colors ~~comprises a red cholesteric layer~~.

10. (Currently Amended) The LMOS beam splitter according to Claim [[8]] 9, wherein the first color cholesteric layer ~~comprises a blue cholesteric layer~~ and the second color cholesteric layer ~~comprises a green cholesteric layer~~ comprise red and blue cholesterics.

11. (Currently Amended) The LMOS beam splitter according to Claim 8, wherein the first color cholesteric layer ~~comprises a green cholesteric layer~~ and the second color cholesteric layer ~~comprises a red cholesteric layer~~ have a different handedness properties.

12. (Currently Amended) The LMOS beam splitter according to Claim ~~[[8]]~~ 10, wherein the first color cholesteric layer comprises a ~~blue cholesteric layer~~ right hand cholesteric and the second color cholesteric layer comprises a ~~red cholesteric layer~~ a left hand cholesteric.

13. (Withdrawn)

14. (Withdrawn)

15. (Withdrawn)

16. (Currently Amended) ~~The prism assembly according to Claim 15,~~ wherein ~~the prism assembly is~~ A light management optical system (LMOS) configured to split an input light beam into at least 3 independent light channels, ~~using only cholesteric based beam splitters~~ modulate each independent light channel, and recombine the independently modulated light channels into an output beam, wherein the light is split and the modulated light channels are re-combined using only cholesteric based beam splitters.

17. (Currently Amended) The prism assembly according to Claim 15, wherein at least one of the cholesteric based beam splitters comprises a substrate and a cholesteric layer supported on the substrate.

18. (Currently Amended) The prism assembly according to Claim 15, wherein ~~the~~ at least one of the cholesteric based beam splitters comprises a prism ~~having a diagonal and a cholesteric layer is supported on the diagonal of the prism~~

a dual layer cholesteric comprising a first color cholesteric layer and a second color cholesteric layer.

19. (Currently Amended) The LMOS ~~prism assembly~~ according to Claim 18, wherein the first color cholesteric layer comprises a blue cholesteric layer and the second color cholesteric layer comprises a red cholesteric layer.

20. (Withdrawn)

21. (Withdrawn)

22. (Currently Amended) The ~~prism assembly~~ LMOS according to Claim [[15]] 16, wherein the ~~prism assembly~~ LMOS is part of a projection television.

23. (Withdrawn)

24. (Currently Amended) The LMOS prism assembly according to Claim ~~23~~ 16, wherein the ~~prism assembly~~ LMOS is part of a Liquid Crystal on Silicon (LCoS) projection HDTV.

25. (Withdrawn)

26. (Withdrawn)

27. (Withdrawn)

28. (Withdrawn)

29. (Withdrawn)

30. (Withdrawn)

31. (Withdrawn)

32. (Withdrawn)

33. (Currently Amended) A quad style ~~prism~~ Light Management System (LMS) assembly, comprising:

an input beam splitter;

a first processing beam splitter and comprising at least one processing face adaptable to a first modulation device positioned to modulate light reflected from the first processing beam splitter;

a second processing beam splitter and a second modulation device positioned to modulate light reflected from the second processing beam splitter and a third modulation device positioned to modulate light passed through the second processing beam splitter comprising at least one processing face adaptable to a modulation device; and

an output re-combination beam splitter.

wherein at least one of the beam splitters comprise a cholesteric based beam splitter.

34. (Currently Amended) The quad style ~~prism~~ LMS assembly according to Claim 33, wherein:

the cholesteric based beam splitter comprises a first prism having a first diagonal and a second prism having a second diagonal;

the first prism and the second prism are abutted to each other along their diagonals; and

the cholesteric based beam splitter further comprises a cholesteric layer is disposed between the diagonals.

35. (Withdrawn)

36. (Withdrawn)

37. (Currently Amended) The quad style ~~prism~~ LMS assembly according to Claim ~~33~~ 35, wherein at least one of the beam splitters comprises a cholesteric based beam splitter ~~comprises~~ comprising a dual color cholesteric layer.

38. (Currently Amended) The quad style ~~prism~~ LMS assembly according to Claim 37, wherein the dual color cholesteric layer comprises a blue cholesteric layer having a first handedness, and a red cholesteric layer having a second handedness opposite the first handedness.

39. (Currently Amended) The quad style ~~prism~~ LMS assembly according to Claim 37, wherein the dual color cholesteric layer comprises a right hand blue ~~cholesteric layer and a left hand red~~ cholesterics ~~cholesteric layer~~.

40. (Withdrawn)

41. (Withdrawn)

42. (Withdrawn)

43. (Withdrawn)

44. (Withdrawn)

45. (Withdrawn)

46. (Withdrawn)

47. (Withdrawn)

48. (Withdrawn)

49. (Currently Amended) The quad style ~~prism~~ LMS assembly according to Claim 33, wherein all of the beam splitters are cholesteric based beam splitters.

50. The quad style ~~prism~~ LMS assembly according to Claim 33, wherein:

the input beam splitter comprises a first color cholesteric layer having a first hand direction; and

the first processing beam splitter comprises a cholesteric layer of the first color and having the first hand direction;

the second processing beam splitter comprises a second color cholesteric layer having the first hand direction and a third color cholesteric layer having a second hand direction opposite the first hand direction[[]], and

~~the output beam splitter comprises cholesteric layer of the first color having the first hand direction.~~

51. (Withdrawn)

52. (Original) The quad style prism assembly according to Claim 50, wherein the first color is green, the second color is red, and the third color is blue.

53. (Withdrawn)

54. (Withdrawn)

55. (Withdrawn)

56. (Withdrawn)

57. (Currently Amended) The quad style ~~prism~~ LMS assembly according to Claim 50, wherein the first hand direction is a right hand direction, and the second hand direction is a left hand direction.

58. (Withdrawn)

59. (Currently Amended) The quad style ~~prism~~ LMS assembly according to Claim 50, wherein each beam splitter comprises a substrate configured to support the beam splitter's cholesteric layer.

60. (Withdrawn)

61. (Currently Amended) The quad style ~~prism~~ LMS assembly according to Claim 50, wherein:

at least one of the beam splitters comprises a first prism having a first diagonal and a second prism having a second diagonal, the first diagonal adjacent to the second diagonal, and the cholesteric layer disposed between the diagonals.

62. (Currently Amended) The quad style ~~prism~~ LMS assembly according to Claim 50, wherein:

at least one of the beam splitters comprises a first prism having a first diagonal and a second prism having a second diagonal, the first diagonal adjacent to the second diagonal, and the cholesteric layer disposed between the diagonals; and

the cholesteric layer comprises a first color cholesteric layer disposed on the first prism diagonal, and a second color cholesteric layer disposed on the second prism diagonal.

63. (Currently Amended) The quad style ~~prism~~ LMS assembly according to Claim 62, wherein the first color cholesteric layer and the second color cholesteric layer have opposite handed directivities.

64. (Currently Amended) The quad style ~~prism~~ LMS assembly according to Claim 50, wherein the prism assembly is part of kernel in a Liquid Crystal on Silicon (LCOS) based projection monitor.

65. (Currently Amended) The quad style ~~prism~~ LMS assembly according to Claim 64, wherein the projection monitor is an HDTV.

66. (Currently Amended) A Liquid Crystal on Silicon (LCoS) High Definition monitor, comprising:

a Light Management System (LMS), comprising an LCoS based kernel having a prism assembly comprising a set of optical components including at least one dual layer cholesteric based beam splitter.

67. (Original) The Liquid Crystal on Silicon (LCoS) High Definition monitor according to Claim 66, further comprising any of a television receiver, DVD player, cable box, and other image source configured to provide image signals to the kernel.